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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,130	10/31/2003	Luiz A. Barroso	200302253-2	2813

7590 09/23/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

NGUYEN, THAN VINH

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,130

Applicant(s)

BARROSO ET AL.

Examiner

Than Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1,9,17-20 are pending.
2. The amendment and IDS, filed 10/31/03, have been considered.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1,9,17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,3,4,8,10,11 of U.S. Patent No. 6,675,265. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1,3,4,8,10,11 of the 6,675,265 patent contains every element of claims 1,8,17-20 of the instant application and such anticipates these claims. *In re Longi*, 759 F. 2d at 896, 225 USPQ at 651. *In re Berg*, 140 F. 3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1,9,17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Laudon et al (US 5,634,110).

As to claims 1,9:

Laudon teaches a cache coherency system using flexible directory bit vectors. Laudon teaches a computer system, comprising:

an interconnect (network in Fig. 4);

a plurality of processor nodes (nodes 404a-404c; Fig. 4), coupled to the interconnect,

each processor node including: at least one processor core (processor 408A; Fig. 4), each processor core having an associated memory cache for caching memory lines of

information (cache 410A);

a plurality of input/output nodes, coupled to the interconnect (processing node/node = I/O node; 10/49-52);

wherein processor nodes and input/output nodes collectively comprise:

input logic for sending an initial invalidation request, the invalidation request identifying a memory line of information and including a pattern of bits for identifying a subset of the plurality of system nodes that potentially store cached copies of the identified memory line (identify and invalidate cached copies to nodes identified in the modified bit vector field; 7/1-44; 7/1-23; 8/17-26); and

processing circuitry, responsive to receipt of the first invalidation request, for determining a next node identified by the pattern of bits in the invalidation request and for sending to the next node, if any, a second invalidation request corresponding to the

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first invalidation request, and for invalidating a cached copy of the identified memory, if any, in the particular node of the computer system (if more bits in the vector field were set (multiple nodes with cache copy), then invalidate those; 7/1-44; 7/1-23; 8/17-26 .

As to claims 17,19:

Laudon teaches the system is reconfigurable so as to include any ratio of processor node to input/output nodes so long as a total number of processor nodes and input/output nodes does not exceed a predefined maximum number of nodes (10/29-35).

As to claims 18,20:

Laudon teaches each node comprises a protocol engine implementing a cache coherency protocol (directory-based cache coherency protocol), the protocol engine of each of the processor nodes is functionally identical to the protocol engine of each of the input/output nodes (protocol of each node uses flexible directory vectors for cache coherency).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 703-305-3866. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 308-1756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen
Examiner
Art Unit 2187